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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,277	10/11/2001	C. Cayce Warf JR.	110088.451	3822

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EXAMINER

SOOHOO, TONY GLEN

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,277

Applicant(s)

WARF ET AL.

Examiner

Tony G Soohoo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 45-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Election/Restrictions

1. Claims 1-44 and 63 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species (claims 1-44), there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 10-28-2003.

Claim Rejections - 35 USC § 102

NOTE: With regards to the claimed recitation of the use of the device with foodstuffs, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 45-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Clapp 4551024.

Clapp discloses:

An apparatus comprising: an elongated housing structure 31 extending from an inlet end 35 to an outlet end 69 along a longitudinal axis; a shaft 99 rotatably engaged with the housing structure to rotate about the longitudinal axis; a spiral blade 101 attached to and protruding from the shaft and continuously spiraling around the shaft the shaft and blade being adapted to rotatably convey and tumble materials from the inlet end to the outlet end as the shaft rotates; and a fluid delivery system 43, 45,

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see figure 3, adapted to apply a treatment fluid to the foodstuffs as they are rotatably conveyed, while agitated and tumbled, from the inlet end to the outlet end, and

wherein the housing structure comprises first and second side-wall portions and a bottom portion, the first and second side-wall and bottom portions forming a generally U-shaped cross-section when viewed along the length of the housing structure, and the diameter of the semi-circular portion of the U-shaped cross-section being slightly greater than the diameter of the spiral blade see figure 7; wherein the housing structure forms an opening at the top, the opening extending along substantially the entire length of the housing structure and being of substantially uniform width so that a lid 29 may engage the opening in the same manner that the applicant's device has applicant's lid 124;

And wherein the at least one manifold 43, and 45 of the fluid delivery system is located closer to the first side-wall (bottom of fig 3) than to the second side-wall (top of fig 3).

4. Claims 45, 60-62 are rejected under 35 U.S.C. 102(b) as being anticipated by Edwards 4329063.

Edwards discloses:

An apparatus comprising: an elongated housing structure 2 extending from an inlet end 8 to an outlet end 4 along a longitudinal axis; a shaft 5 rotatably engaged with the housing structure to rotate about the longitudinal axis; a spiral blade 7 attached to and protruding from the shaft and continuously spiraling around the shaft the shaft and blade being adapted to rotatably convey and tumble materials from the inlet end to the

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outlet end as the shaft rotates; and a fluid delivery system 23, 21, see figure 2, adapted to apply a treatment fluid to the materials as they are rotatably conveyed, while agitated and tumbled, from the inlet end to the outlet end, and

further comprising a plurality of paddles wherein the spiral blade is attached to and protrudes from a first longitudinal portion of the rotatable shaft to about one-third of the way of the shaft from the inlet, and the plurality of paddles 12 is attached to and protrudes from a second longitudinal portion of the rotatable shaft from 1/3 of the way to the end of the shaft outlet.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 45, 48-49, and 51-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Skinner 475,618 in view of Wilkinson et al 3348820.

Skinner discloses

An apparatus comprising: an elongated housing structure **B** extending from an inlet end **D** to an outlet end **C** along a longitudinal axis; a shaft **N** rotatably engaged with the housing structure to rotate about the longitudinal axis; a spiral blade **N** attached to and protruding from the shaft and continuously spiraling around the shaft the shaft and

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blade being adapted to rotatably convey and tumble materials from the inlet end to the outlet end as the shaft rotates;

The Skinner reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of a fluid delivery system 23, 21, adapted to apply a treatment fluid to the materials as they are rotatably conveyed, while agitated and tumbled, from the inlet end to the outlet end,

The Wilkinson et al reference discloses:

An apparatus comprising: an elongated housing structure 10 for mixing mortar extending from an inlet end 28 to an outlet end 27 along a longitudinal axis; a shaft 11 rotatably engaged with the housing structure to rotate about the longitudinal axis; a spiral blade 14 and spiral paddles 21, 20, 19, 18, 17, 16, 15 attached to and protruding from the shaft and continuously spiraling around the shaft the shaft and blade being adapted to rotatably convey and tumble materials from the inlet end to the outlet end as the shaft rotates; and a fluid delivery system 22, adapted to apply a treatment fluid to the materials as they are rotatably conveyed, while agitated and tumbled, from the inlet end to the outlet end.

In view of the teaching by the Wilkinson reference that a screw conveyor for cement mortar may have a fluid delivery system so that the dry materials may be mixed with liquid as it is mixed and conveyed from one end of a screw mixer/conveyor to the outlet, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the mortar mixer of Skinner with an additional element of a fluid delivery system so that liquid maybe added to the mixture as it is conveyed to the outlet.

With regards to claims 48 and 49, note that there are plural protrusions b on the screw conveyor a and extend in a plane tangential to the shaft and extend from the shaft to or near the edge of the spiral blade a. With regards to claims 51-54, note that the single screw conveyor N comprises of one, two, three, and more than 4 protrusions.

With regards to claim 58 note that the protrusions are attached to the screw thus is integral with the screw and with regards to respective claims 57 and 59, to the manner or in which the protrusions are attached and held to the screw helix surface, in particular, that the protrusions are welded onto the screw, or is removably attached to the screw, the limitation is directed to the manner of making the device.

Since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). And since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

And whereby known attachment methods are welding, removable screws, it is deemed that it would have been obvious to one of ordinary skill in the art to attach the protrusions onto the screw surface via known techniques of attachment such as welding, or alternately, provide a removable separative attachment such as the use of screws in order to more effectively ease construction or lower construction costs.

With regards to the protrusions angle of rotation from one to the next protrusion being 90 degrees, claim 55, *Wilkinson et al* discloses the claimed invention except for the subsequent protrusions occurring more frequently than at a 90 degree occurrence.

Whereas the spacing of the protrusions is a direct variable to the cost of production and the amount of shear effect upon the mixed material, It would have been obvious to one having ordinary skill in the art at the time the invention was made to move/remove the protrusions to an occurrence of 90 degrees so that the amount of shear effects produced by the screw or the production costs are lowered, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

7. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Skinner 475,618 in view of Wilkinson et al 3348820 as applied to claim 49 above, and further in view of Millauer 3924839.

Skinner 475,618 in view of Wilkinson et al 3348820 discloses all of the recited subject matter as defined within the scope of the claims with the exception of the cross section of the protrusion being triangular or V-shaped. The patent to Millauer teaches that a screw flight 2 mwith a protrusion 5 extending from the base of the shaft to the edge of the helix may alternately be modified to a V-shape or triangle shape via fillets 7,8, see figures 1, 2, and see figure 5, left side of the shaft element 5, whereby it provides a better flow across the shear gap caused by the protrusion web.

In view of the teaching of Millauer that a protrusion web element upon a screw helix on a screw conveyor may be shaped in a triangle or V-shaped, as seen by the filets 7,8, it is deemed that it would have been obvious to one of ordinary skill in the art to provide a triangular fillet between the screw helix a and the

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proturusion flange b so that better flow is achived for shear across the protrusion flange b.

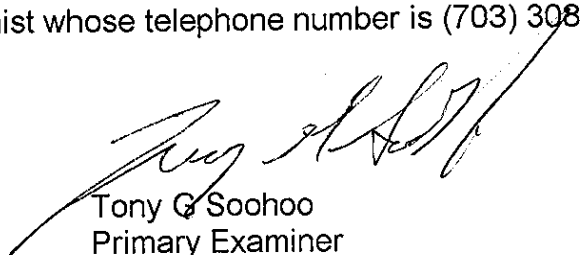
Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following disclose screw conveyors: Dray 4444507, Zeuthen et al 1345657, Chambers 1293034, Goldberger 3459409, Baker 3456599, Christian 4530432, Star et al 4733607, Duckworth 5470147, Coates et al 6349570, Koch 4092015, Godley 4187030, Owen 1753716, Findlay 2617273, Potter et al 3130070 and Diaz 5837295.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 7:00 AM - 5:00 PM, Tues. - Fri..

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tony G Soohoo
Primary Examiner
Art Unit 1723
